

## Book Reviews

GOOD NATURED: THE ORIGINS OF RIGHT AND WRONG IN HUMANS AND OTHER ANIMALS. By Frans de Waal. 1996. Cambridge (MA): Harvard University Press. 296 pp. ISBN 0-674-35660-8. \$24.95 (cloth).

This book is important, because it demonstrates that reciprocal altruism plays a significant role in the social lives of monkeys and apes and suggests the role it may have played in the evolution of morality. De Waal is courageous in daring to speak of nonhuman primates in such anthropomorphic terms as friendship, intentionality, shame, empathy, spite, altruism, and deception. He also dares to record some arresting anecdotes in the lives of his subjects that brought these concepts to mind. As he points out, his long-term research on several monkey and ape species gives him some license to do so.

*Good Natured* is not only a good, diverting read, but it is also a conceptually rich book. In the first chapter, "Darwin's Dilemmas," de Waal challenges the idea, which flows from Thomas Henry Huxley to George Williams, that nature is morally indifferent or even subversive. He counterposes this with his own conviction: "Humans and other animals have been endowed with a capacity for genuine love, sympathy, and care—a fact that can and will one day be fully reconciled with the idea that genetic self-promotion drives the evolutionary process" (p. 16, 17).

It is fair to say that *Good Natured* is de Waal's attempt to do this by constructing a "broader view" of primate evolution based on Trivers' evolutionary concept of reciprocal altruism. Reciprocal altruism is a form of social selection that favors cooperation and aid among nonrelatives. As he notes later, it complements and contrasts with kin selection, which favors aid to relatives. Reciprocal altruism is costly to the giver and is contingent on real or anticipated reciprocity, which occurs with a time lag. It depends upon association of individuals who know one another and are capable of tracking

reciprocity and failure of reciprocity. De Waal discusses related ideas of Kropotkin and Richard Alexander, concluding with a list of preconditions for the evolution of morality. These include group values, mutual aid, and internal conflict, which requires conflict resolution at dyadic or higher levels.

The second chapter, "Sympathy," describes examples of the reactions of monkeys and apes to conflict, pain and injury, and handicaps in other group members. These include responses of reconciliation between opponents following fights and even consolation of the victim by third parties in the case of chimpanzees. De Waal also describes examples of apparent sympathy, identification, and empathy.

The third chapter, "Rank and Order," describes the interplay between the pressures of social hierarchy and expectations of reciprocity. Specifically, de Waal argues that "Hierarchies tie individuals together through a conditional proposition along the lines of 'If you act like this, then we will be glad to have you,' and its reverse: 'If you do not act like this, then you may get punished or, worse, expelled'" (p. 103). He describes the control role of dominant males who mediate conflicts in a relatively impartial fashion. He provides some evidence that individuals may have a sense that they deserve to be disciplined after a transgression. He also discusses the socialization of young into these expectations as well as their testing of rules.

The fourth chapter, "Quid pro Quo," focuses particularly on reciprocity in the widespread phenomenon of alliance formation as well as reciprocity in such other domains as sex and food sharing after hunts by chimpanzees. De Waal describes experiments to test the reciprocity hypothesis that he did with chimpanzees at Yerkes. "Food transfers in the colony were analyzed in all possible directions among adults. As predicted by the reciprocity hypothesis, the number of transfers in each direction was related to the number in the opposite direction" (p. 153). He also notes that, as would be expected

from RA theory, primates, especially chimpanzees, seem to keep track of favors given and received. Revenge is the converse of reciprocity: Chimpanzees take revenge on those who fail to reciprocate.

The fifth chapter, "Getting Along," focuses on conflict resolution. De Waal addresses ideas about the costs and benefits of group life and its possible evolution as defense against predators. Noting that strife is an inevitable concomitant of group life, he presents a relational model for competition. According to this model, aggression results from conflicts of interests among individuals with a long shared history. These conflicts can lead to tolerance, aggression, or avoidance. Aggression requires conciliation. All of these matters involve assessments of the motives and moods of other group members that are achieved particularly through greetings.

In his last chapter, de Waal notes that "The question of whether animals have morality is a bit like the question of whether they have culture, politics, or language. If we take the full-blown human phenomenon as a yard stick, they definitely do not. On the other hand, if we break the relevant human

abilities into their component parts, some are recognizable in other animals" (p. 210). He concludes that, in each case, they do have these components. In the case of morality, these are sympathy-related traits, norm-related characteristics, reciprocity, and getting along. He ends with the notion of a pyramid of increasing levels of concern from self, to family, to community, to tribe or nation, to humanity, to life itself. This pyramid floats on resources, its lowest level of exposure rising with increasing resources.

De Waal's book points the way toward future research. In my view, this might include use of stages of development of empathy and reciprocity in human infants and young children as a basis for comparing levels of morality in monkeys and apes. Such stages could be relevant characteristics for reconstructing the evolution of morality of the great apes with reference to that of the Old World monkeys using cladistic methodology.

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CONTEMPORARY ISSUES IN HUMAN EVOLUTION.  
Edited by W. Eric Meikle, F. Clark Howell,  
and Nina G. Jablonski. 1996. San Francisco:  
California Academy of Sciences. 193 pp. ISBN 0-940228-45-9. \$35.00 (cloth).

Intended to disseminate the paleoanthropological "state of the art" to "the general public" (p. vii), this edited volume of the proceedings of the First Wattis Foundation Endowment Symposium held at the California Academy of Sciences in February, 1993, only partially succeeds. Nine leading scholars in our field contribute their views concerning a diverse array of subjects, but only a few of these chapters (by Tattersall, McHenry, Wood, and Marks) are written at a level appropriate for the target audience. Others (for example, by Howell, Tassy, and Clark) require advanced knowledge in evolu-

tionary theory, systematics, and taxonomy that would make these contributions largely inaccessible to even scientifically-educated lay readers. Nevertheless, this volume has value to professional anthropologists and particularly to our students in providing excellent, up-to-date summaries of many of the issues currently being debated within human evolutionary studies.

Although the book has no formal structure beyond the simple listing of the nine chapters, the contributions are grouped into a fairly coherent organization that can be divided into thirds. The first three chapters, by Howell, Tattersall, and Tassy, are largely theoretical in nature. These are followed by chapters written by McHenry, Clarke, and Wood that address the phylogeny and taxonomy of robust australopithecines and early *Homo*. The final third of the book shares, at

least in part, a focus on modern human origins. Each of these last three chapters, however, approaches this contentious debate from a differing perspective: paleoanthropology (Stringer), archaeology (Brooks), and molecular anthropology (Marks). I will use this putative structure to organize the critique that follows.

In the first two contributions, both Howell and Tattersall decry a perceived lack of evolutionary theoretical rigor in current paleoanthropological practice. Howell pointedly asks why is there not more serious consideration of branching sequences and extinction in human evolutionary studies and avers that "[s]ome frameworks of hominid evolution strongly smack, if not of orthogeneticism, at least of outright progressivism" (p. 10). Tattersall's oft-repeated theme that too few species are recognized in the hominid fossil record, an idea echoed by Howell and later by Stringer in this volume, is proffered as symptomatic of our field's theoretical deficiency. *Lemur*, a polyspecific yet morphologically undifferentiated primate genus, exemplifies biological variation within our order, according to Tattersall. This suggests to him that, when demonstrably distinctive morphs are recovered from the fossil record, they require recognition as separate species, a responsibility most paleoanthropologists have been loathe to undertake.

However, within several anthropoid species (*Papio hamadryas*, *Presbytis entellus*, and *Homo sapiens*, for example) morphological, including osteological, diversification has occurred in the absence of reproductive isolation arising between morphs. This pattern of phenodiversity developing within the confines of a single biological species seems to be particularly prevalent among terrestrial, wide-ranging primates (interestingly, an apt description of extra-African, fossil *Homo*). Therefore, contrary to Tattersall's presumption, the demonstration of morphological differentiation in the later hominid fossil record may in fact reflect variation within, and not necessarily between, species.

If the problems of delineating hominid paleospecies appear intractable, as illustrated in the first third of the book, then imagine the difficulties that McHenry,

Clarke, and Wood encounter in treating that even more ethereal taxonomic construct, the genus. Clarke discusses the validity of *Paranthropus*, Wood tackles the thorny problem of what is and who belongs within early *Homo*, whereas McHenry's contribution is primarily concerned with the phylogeny of these early hominids. Clarke argues that the resurrection of *Paranthropus* is justified based on the powerful chewing adaptation shared by the robust australopithecines of southern and eastern Africa. In addition, he points out that *A. africanus* and *H. habilis* are demonstrably more similar to each other than either is to *Paranthropus*. This precludes assignment of the robust forms back into *Australopithecus*, and further suggests to Clarke that J.T. Robinson was correct in subsuming *A. africanus* within *Homo*.

Other researchers, such as Fred Grine, have supported the reintroduction of *Paranthropus* based on cladistic analyses that demonstrate this clade's monophyly. McHenry's contribution to this volume provides the alternative view that *Paranthropus* is paraphyletic. McHenry persuasively argues that former cladistic analyses were driven by features reflecting powerful mastication that swamped information from other functional complexes (e.g., encephalization and cranial base kyphosis). His analyses suggest that an *A. africanus*-like form is the most likely last common ancestor of *Homo* and the later robust australopithecines, relegating the species represented by "the Black Skull" (KNM-WT 17000) to extinction without issue.

I contend that the traditional taxonomy of the australopithecines remains as viable as Clarke's proposal. First, it is important to acknowledge "that genera are 'necessarily more arbitrary' than species" (Wood citing G.G. Simpson, p. 105) and, in agreement with Clarke, that genera are distinguished on the basis of adaptive differences. Given these criteria, *Australopithecus* can retain both *A. africanus* and the "paranthropines" when this genus is defined on the basis of a common adaptation characterized by relatively small brain size, increasing megadontia, relatively small body size, and semiarbo-reality. In contrast, *Homo* displays relatively large brain size, decreasing megadontia, rela-

tively large body size, and obligate terrestriality.

I feel that this dichotomy works particularly well when the small-brained, small-bodied "habilines" (e.g., KNM-ER 1813, OH 24, OH 62) are removed from the genus *Homo* and placed within *Australopithecus*. The ultimate success of our genus, I submit, was most likely assured by the twin innovations 2 million years ago of increasing brain and body size, as exemplified by "habiline" fossils, such as KNM-ER 1470 and the assumed conspecific KNM-ER 1481. Wood entertains, without fully endorsing (p. 111), an even more restrictive definition of *Homo*, excluding all of the "habilines" and including only African *H. erectus* and later members of the genus.

The ultimate evolution of genus *Homo* is the common thread that binds the final three chapters. Stringer succinctly reiterates his positions on various paleoanthropological facets of the modern human origins debate, whereas Brooks provides an excellent summation of how diverse archaeological analyses can inform us about hominid behavior throughout the Pleistocene. Marks concludes the book with his chapter discussing the contributions of the molecules to various anthropological concerns. His was perhaps the most entertaining chapter in the book due to his defiantly politically-incorrect style: in his discussion of the peculiar transmission of mtDNA, he invites the

reader to "Imagine a medieval village invaded by Crusaders who make—shall we say—unsolicited contributions to the gene pool" (p. 179).

Stringer, Brooks, and Marks (as well as Tattersall and Howell earlier in the book) reach the common conclusion that the origin of *H. sapiens* was a relatively recent event that occurred only in Africa and was subsequently followed by that species migration and establishment throughout the balance of the Old World. The neophyte reader, for whom the book is intended, could not be blamed for assuming that anthropology has indeed reached consensus regarding this issue, that the Replacement Model of modern human origins is universally accepted. However, equally compelling interpretations of the same data have been proposed by other paleoanthropologists, archaeologists, and geneticists that point to the origins of modern humans as a transformational, rather than a cladistic, event. Although *Contemporary Issues in Human Evolution* offers well-written, pithy reviews of the major debates in our field, one may have to look elsewhere for more balanced treatments of these controversies.

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